

DATA EVALUATION RECORD
SPIKED WHOLE SEDIMENT *Leptocheirus plumulosus* TOXICITY TEST
OCSPP GUIDELINE 850.1740

1. **CHEMICAL:** Metconazole PC Code No.: 125619
2. **TEST MATERIAL:** Metconazole Technical Purity: 98.3%
3. **CITATION:**

Author(s): Billa, N., Elliott, S., Gallagher, S.P., Martin, K.H., and Thomas, S.T.

Title: Metconazole: A 10-Day Acute Toxicity Test with the Saltwater Amphipod (*Leptocheirus plumulosus*) Using Spiked Sediment

Study Completion Date: March 29, 2018

Performing Laboratory: EAG, Inc.

Sponsor: Kureha Corporation

Laboratory Report ID: 556A-102
MRID No.: 50674401
DP Barcode: 451800

4. **REVIEWED BY:** Matthew Garbarino, Environmental Scientist, CDM/CSS-Dynamac JV

Signature:  **Date:** 6/27/2019

- APPROVED BY:** Adrian Graff, Environmental Scientist, CDM/CSS-Dynamac JV

Signature:  **Date:** 7/3/2019

5. **REVIEWED BY:** Melissa E. Bridges, Ph.D., Biologist, EPA/OPP/EFED/EISB

Signature: **Date:**

APPROVED BY: Frank T. Farruggia, Ph.D., Senior Scientist, EPA/OPP/EFED/ERB1

Signature:

Date:

6. **DISCLAIMER:** *This Data Evaluation Record may have been altered by the Environmental Fate and Effects Division subsequent to signing by CDM/CSS-Dynamac JV personnel. The CDM/CSS-Dynamac Joint Venture role does not include establishing Agency policies.*

7. **STUDY PARAMETERS:**

Scientific Name of Test Organism: *Leptocheirus plumulosus*
 Age of Test Organism: 7-8 days old at test initiation
 Definitive Test Duration: 10 days
 Study Method: Flow-through
 Type of Concentrations: Mean-measured sediment (bulk and OC-normalized), overlying water, and pore water

8. **CONCLUSIONS:**

In a 10-day spiked-sediment test with *Leptocheirus plumulosus*, dry weight was affected at the highest test level. Survival was not affected.

	Bulk Sediment (mg ai/kg)	OC-Normalized Sediment (mg ai/kg-OC)	Pore Water (mg ai/L)	Overlying Water (mg ai/L)
Survival	LC ₅₀ : >63 95% CI: N/A Slope: N/A NOAEC: 63 LOAEC: >63	LC ₅₀ : >24,000 95% CI: N/A Slope: N/A NOAEC: 24,000 LOAEC: >24,000	LC ₅₀ : >10.9 95% CI: N/A Slope: N/A NOAEC: 10.9 LOAEC: >10.9	LC ₅₀ : >0.193 95% CI: N/A Slope: N/A NOAEC: 0.193 LOAEC: >0.193
Dry Weight	EC ₅₀ : >63 95% CI: N/A Slope: N/A NOAEC: 32 LOAEC: 63	EC ₅₀ : >24,000 95% CI: N/A Slope: N/A NOAEC: 12,000 LOAEC: 24,000	EC ₅₀ : >10.9 95% CI: N/A Slope: N/A NOAEC: 5.73 LOAEC: 10.9	EC ₅₀ : >0.193 95% CI: N/A Slope: N/A NOAEC: 0.102 LOAEC: 0.193

9. **ADEQUACY OF THE STUDY:**

A. Classification: This study **is scientifically sound** and is classified as **acceptable**.

B. Rationale: NA

C. Reparability: NA

10. **MAJOR GUIDELINE DEVIATIONS:**

The study was conducted according to OCSPP guideline 850.1740: *Spiked Whole Sediment 10-Day Toxicity Test, Saltwater Invertebrates* and reviewed according to the same guideline. One deviation was noted:

- 1) The physicochemical properties of Metconazole Technical were not reported.

11. **MATERIALS AND METHODS:**

A. Test Organisms

Guideline Criteria	Reported Information
Species: <i>Ampelisca abdita</i> , <i>Eohaustorius estuarius</i> , <i>Leptocheirus plumulosus</i> , or <i>Rhepoxynius abronius</i>	<i>Leptocheirus plumulosus</i>
Life Stage: 2-4 mm for <i>L. plumulosus</i> to 3-5 mm for the three remaining species. No mature male or female <i>A. abdita</i> or <i>L. plumulosus</i> should be used for testing.	7-8 days old at test initiation
Supplier The methods for collection of test organisms are species-specific. Organisms obtained from the wild are permissible.	Amphipods used in the test were obtained from EAG Laboratories-Easton cultures. The original culture was obtained from Aquatic Research Organisms, Hampton, New Hampshire and the identity of the species was verified by the supplier.
All organisms from the same source?	Yes

B. Source/Acclimation

Guideline Criteria	Reported Information
Acclimation Period:	The organisms were held in water from the same source as was used during the test. Known age organisms were obtained from the culture by isolating adults in the culture 7 days prior to the start of the test. At 5 days prior to the test, <48-hour old neonates were isolated from the culture tanks and held until the start of the test.
Feeding:	During the holding period, the amphipods were fed Phyto Feast® approximately three times per week.
Pretest Mortality:	No mortality or sublethal effects were present in the acclimation period.

C. Test System

Guideline Criteria	Reported Information
<p>Source of dilution water (overlying water) and sediment:</p> <p>Natural sea water is preferable, but reconstituted water is acceptable. Natural sea water should be from an uncontaminated source, covered, maintained at 4°C, and used within 2 days of collection.</p> <p>Uncontaminated natural sediment is recommended, but formulated sediment is acceptable. Natural sediments should be stored at 4°C in the dark and used within 2 to 8 weeks of collection.</p>	<p>The water used for holding and testing was natural seawater obtained at Indian River Inlet, Delaware. This water was diluted to 20‰ with laboratory well water before being filtered and sterilized.</p> <p>Natural saltwater sediment collected from Wye River, Maryland was used as the test sediment. The percent organic carbon of the sediment was determined to be 0.26%.</p> <p>The results of periodic analyses to measure selected organic and inorganic constituents were provided for water and sediment samples.</p>

Guideline Criteria	Reported Information
Does water support test animals without observable signs of stress?	Yes
Quality Of Water If problems are observed in culturing or testing of organisms, it is desirable to test water quality. Particulate, TOC, COD should be <5 mg/L and residual chlorine <11 µg/L	There were no apparent problems with water quality.
Water Temperature 15°C for <i>E. estuarius</i> and <i>R. abronius</i> , 20°C for <i>A. abdita</i> , and 25°C for <i>L. plumulosus</i> .	24.0 – 25.7°C
pH	8.1 – 8.5
Dissolved Oxygen Results are unacceptable if DO falls to <60% saturation.	≥6.4 mg/L (≥86% of saturation) with aeration
Salinity Overlying water salinity should be 28 ppt for <i>A. abdita</i> and <i>R. abronius</i> and 20 ppt for <i>E. estuarius</i> and <i>L. plumulosus</i> .	21‰
Ammonia	<0.17 – 0.564 mg/L as NH ₃ in overlying water
Sediment Characterization All sediment must be characterized for: pH, ammonia concentration of pore water, organic carbon content (total organic carbon (TOC)), particle size distribution, and percent water content.	Particle distribution – 96% sand, 4% silt, and 0% clay USDA classification – Sand Organic matter content – 0.45% Organic carbon content – 0.26% Percent water holding capacity at 1/3 Bar – 2.9% pH – 8.3 CEC – 9.8 meq/100 g Bulk density (disturbed) – 1.24 g/cc Ammonia concentration of pore water – Not Reported

Guideline Criteria	Reported Information
Additional Sediment Analysis BOD, COD, cation exchange capacity, Eh, total inorganic carbon, total volatile solids, acid volatile sulfides, metals, synthetic organic compounds, oil and grease, petroleum hydrocarbons, and interstitial water analysis.	<u>Pesticides and Organics (µg/kg)</u> Beta BHC – 130 Gamma BHC – Lindane – 28 <u>Metals (mg/kg)</u> Aluminum – 3,970 Barium – 10.6 Bromide by IC (solid) – 12.9 Calcium – 364 Chloride by IC (solid) – 3,390 Chromium – 10.7 Cobalt – 1.16 Copper – 3.66 Iron – 4,070 Lead – 5.20 Magnesium – 1,170 Manganese – 115 Nickel – 3.27 Potassium – 702 Sodium – 3,260 Sulfate by IC (solid) – 313 Vanadium – 9.34 Zinc – 17.5

Guideline Criteria	Reported Information
<p>Effect of Grain Size Grain size may adversely affect some species of amphipod:</p> <p><i>A. abdita</i>: survival may be impacted in sediments containing 95% or more sand.</p> <p><i>L. plumulosus</i>: survival should not be impacted in clean sediments containing 100% sand to 100% sand + clay.</p> <p><i>E. estuarius</i>: survival is unaffected by clean sediments containing 0.6 to 100% sand. However, increased mortality may be associated with increased proportions of fine-grained sediment.</p> <p><i>R. abronius</i>: very fine grains, particularly silts and clays, may reduce survival.</p>	<p><i>L. plumulosus</i>: $\geq 90\%$ survival was observed in the negative and solvent control groups and therefore sediment grain size did not adversely affect survival of this species.</p>
<p>Laboratory Spiked Sediment Material should be reagent grade unless prior evaluations dictate formulated materials, etc.; Must know the test material's identity, quantity of major ingredients and impurities, water solubility, estimated toxicity, precision and bias of analytical method, handling and disposal procedures.</p>	<p>Identity: Metconazole Technical Synonym(s): Metconazole Description: White powder IUPAC name: Not reported CAS name: 5-[(4-chlorophenyl)methyl]-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol Lot/batch No.: 19503 (Batch No.) Purity: 98.3% Storage: Not reported</p>

Guideline Criteria	Reported Information
<p>Stock Solutions Test material should be dissolved in a solvent prior to mixing into test sediment; If solvent is used, both solvent control and negative control are required.</p>	<p>A 100 mL primary stock solution was prepared by mixing a calculated amount of test substance into HPLC grade acetone at a nominal concentration of 10.0 mg ai/mL. The stock solution concentration was adjusted to 100% active ingredient during preparation, based on the reported test substance purity (98.3%). The primary stock solution was mixed by inversion and appeared clear and colorless with no visible precipitates. Four secondary stock solutions (100 mL each) were prepared in acetone at nominal concentrations of 0.63, 1.3, 2.5 and 5.0 mg ai/mL by serial dilution. The secondary stock solutions were mixed by inversion, and all appeared clear and colorless, with no evidence of precipitates.</p> <p>A solvent control and negative control group were included in the test.</p>
<p>Test Concentrations For Spiked Sediment For LC50 calculation, test concentrations should bracket the predicted LC50; sediment concentrations may be normalized to factors other than dry weight (e.g. organic content, acid volatile sulfides); Sediment may be mixed using rolling mill, feed mixer or hand mixer.</p>	<p>A 16-mL volume of the appropriate stock solution was applied to 80 g of sand. The treated sand was then placed in a fume hood for 2 hours to allow the solvent to dissipate. The treated sand was then added to 720 g of natural sediment in a 2000 mL plastic Nalgene bottle. The sediment was then mixed on a roller mill for ~1 hour. Additional natural sediment was added to the premix to achieve a final weight of 1600 g dw, then this batch was mixed on a roller mixer for ~16 hours. The sediment was prepared in duplicate to account for the total volume needed for the test.</p> <p>The range of concentrations (6.3 to 100 mg ai/kg dw sediment) were selected to establish the LC₅₀ and NOAEC/LOAEC.</p>

Guideline Criteria	Reported Information
Test Aquaria 1. <u>Material</u> : Glass or stainless steel or perfluorocarbon plastics. 2. <u>Size</u> : 1 L chambers containing 175 ml (2 cm) of sediment and 800 ml of overlying water.	Glass 1500 mL glass beakers filled with 2 cm (approximately 240 mL) of sediment and 800 mL of seawater
Type of Dilution System Static	Flow-through
Aeration Overlying sea water should be continuously aerated except when test organisms are being added. DO should be maintained at approximately 90% saturation using gentle aeration without disturbing the sediment.	Overlying water was continuously aerated.
Photoperiod Constant lighting to assure that the test organisms remain burrowed. Recommended intensity is 500 to 1000 lux.	16 hours light and 8 hours of darkness, with a 30-minute transition period of low light intensity provided when lights go on and off to avoid sudden changes in light intensity.
Solvents Use of a solvent should be avoided since they may influence the concentration in pore water. If used, it should not exceed 0.5 mL/L for static tests or 0.1 mL/L for flow-through tests. Acceptable solvents include triethylene glycol, methanol, ethanol, or acetone. Surfactants should not be used.	Acetone was used as a solvent and was allowed to evaporate prior to testing.

D. Test Design

Guideline Criteria	Reported Information
Sediment Into Test Chambers	The water/sediment systems in the test

Guideline Criteria	Reported Information
<p>One day prior (Day -1) to start of test: test sediment, reference sediment, and negative control sediment should be thoroughly homogenized and added to test chambers; Overlying water is added to chambers in a manner that minimizes suspension of sediment.</p>	<p>chambers were allowed to equilibrate for 10 days prior to introduction of the organisms. Approximately 800 mL of the filtered saltwater was slowly added to the test compartments prior to placing them in the test chambers so that the water delivery does not disturb the sediment.</p>
<p>Renewal of Overlying Water: The overlying water does not have to be renewed.</p>	<p>The flow-through system provided intermittent renewal of overlying water.</p>
<p>Placing Organisms in Test Chambers: Should be handled as little as possible and introduced into overlying water below the air-water interface.</p>	<p>7-8 day old amphipods were impartially and sequentially added one or two at a time to transfer containers containing test water until each contained its complement of 20 individuals. Transfer containers were then indiscriminately assigned to test compartments prior to test initiation.</p>
<p>Range Finding Test A definitive test will not be required if no toxicity is observed at concentrations of 100 mg/kg dry weight of sediment.</p>	<p>A non-GLP range-finding test was conducted to determine the test concentrations used in the definitive test. The nominal concentrations selected for the range-finding test were 0.010, 0.10, 1.0, 10 and 100 mg ai/kg in addition to a negative and solvent control. Four replicates containing 20 organisms in each replicate were maintained for each concentration and control. The procedure for dosing the rangefinder and the equilibration time was equivalent to that which was used in the definitive test. Nominal test concentrations were selected in consultation with the Sponsor based on exploratory range-finding toxicity data. Mortality ranged from 74-94%.</p>

Guideline Criteria	Reported Information
Monitoring the test All test chambers should be checked daily and observations made to assess organism behavior such as sediment avoidance.	The test compartments were observed daily during the test to make visual assessments of any abnormal behavior.
Nominal Concentrations of Definitive Test Control(s) and at least 5 test concentrations; dilution factor not greater than 50%. Concentrations above aqueous solubility may be used.	Nominal concentrations selected for use in this study were 6.3, 13, 25, 50 and 100 mg ai/kg dry weight of sediment.
Number of Test Organisms 20 organisms per test chamber are recommended. Five replicates per treatment should be used.	8 replicates with 20 organisms per replicate were used.
Test organisms randomly or impartially assigned to test vessels?	Yes
Feeding Organisms do not have to be fed during the test.	During the test, each replicate test compartment was fed 1.0 mL of Phytofeast (after the renewal of overlying water) daily. Organisms were not fed on the last day of the test.
Water Parameter Measurements Temperature should be measured daily from at least one replicate per treatment, and must be monitored continuously in water bath or exposure chamber. Salinity, DO, and pH should be measured in overlying water daily in one test chamber per treatment, and should be measured in all test chambers at study initiation and termination. Ammonia should be measured near day 2 and day 8, and should be accompanied by pH and temperature measurements.	Salinity and ammonia were measured at the beginning and end of the test. DO was measured daily. pH was recorded on days 0, 3, 7, and 10. Temperature was measured instantaneously each day and continuously.

Guideline Criteria	Reported Information
pH, temperature, and ammonia concentration should be measured in pore water at the beginning of the test.	
Chemical Analysis Concentrations should be measured in sediment, interstitial water, and overlying water at the beginning and end of the test. Degradation products should also be measured where appropriate.	The replicate test compartments prepared for each treatment and control group were collected for analysis of overlying water, pore water, and sediment on Day 0 and at test termination on Day 10.

12. REPORTED RESULTS:

A. General Results

Guideline Criteria	Reported Information
Quality assurance and GLP compliance statements were included in the report?	Yes. This study was conducted in compliance with Good Laboratory Practice Standards as published by the U.S. Environmental Protection Agency (40 CFR Part 160 and Part 792), OECD Principles of Good Laboratory Practice (ENV/MC/CHEM (98) 17), and Japan MAAF (11 Nousan, Notification No. 6283, Agricultural Production Bureau, 1 October 1999).
Control Criteria Was recovery of organisms from control sediment should equal or exceed 90% in a 10-day test or 80% in a 28-day test?	Yes, mortality was 9% and 10% in the negative and solvent controls, respectively.

Guideline Criteria	Reported Information
Percent Recovery of Chemical:	<u>Recoveries (from QC samples):</u> <u>Sediment:</u> Spiked at 1.00 and 125 mg ai/kg Recovery = 95.5 to 100% (n = 4) LOQ = 1.00 mg ai/kg <u>Water:</u> Spiked at 0.0100 and 25.0 mg ai/L Recovery = 79.1 to 90.6% (n = 4) LOQ = 0.0100 mg ai/L
Data Endpoints - Survival - Reburial, optional for <i>E. estuarius</i> , <i>L. plumulosus</i> , and <i>R. abronius</i> .	-Survival -Dry Weight
Raw data included?	Yes

Effects Data:

Toxicant Concentration		Percent Survival ^(a) (Mean \pm SD)	Dry Weight, mg/amphipod (Mean \pm SD)
Nominal Sediment (mg ai/kg)	Mean-Measured Sediment (mg ai/kg)		
Negative Control	<LOQ ^(b)	90 \pm 1.4	0.255 \pm 0.03
Solvent Control	<LOQ ^(b)	91 \pm 1.2	0.271 \pm 0.03
6.3	4.5	94 \pm 1.8	0.289 \pm 0.04
13	8.6	97 \pm 0.74	0.302 \pm 0.04
25	19	94 \pm 1.2	0.298 \pm 0.02
50	32	95 \pm 1.5	0.291 \pm 0.05
100	63	93 \pm 1.5	0.200 \pm 0.03

^(a) Per replicate; each replicate contained 20 amphipods at test initiation

^(b) LOQ for sediment was 1.00 mg ai/kg

Biological:

Mean percent survival at test termination was 90% and 91% in the negative control and solvent control groups, respectively. Mean percent survival at test termination in groups exposed to the test material ranged from 93 to 97%.

Dry weight averaged 0.255 and 0.271 mg/amphipod in the negative control and solvent control groups, respectively, and ranged from 0.200 to 0.302 mg/amphipod in the exposed groups.

Analytical:

Recovery ranged from 79.1 to 90.6% in saltwater from QC samples. Mean-measured concentrations for sediment were <LOQ (<1.00, negative and solvent control), 4.5, 8.6, 19, 32, and 63 mg ai/kg, or <LOQ (<1.00, negative and solvent control), 1700, 3300, 7300, 12000, and 24000 mg ai/kg OC, <LOQ (<0.0100, negative and solvent control), 0.452,

1.02, 2.44, 5.73, and 10.9 mg ai/L for pore water, and <LOQ (<0.0100, negative and solvent control), 0.0119, 0.0284, 0.0740, 0.102, and 0.193 mg ai/L for overlying water.

B. Statistical Results

Method: The NOAEC and the LOAEC were determined by statistical analyses of the survival and growth (dry weight) data. Analyses by the study author were conducted using TOXSTAT and were reported in terms of mean-measured sediment concentrations.

Data from the negative and solvent control groups were compared using a t-test. Since no differences were detected between the two control groups ($p > 0.05$) for both survival and growth, the treatment groups were compared to the pooled control group to evaluate treatment-related effects. The survival and growth data were evaluated for normality and homogeneity of variance ($p = 0.01$) using the Chi-Square test and Levene's test, respectively.

The assumption of homogeneity was met, however, the assumption of normality was not met in the survival data, so an attempt was made to correct the condition by transformation of the data. Since the transformation did not correct the problem, the data in the treatment groups were compared to the pooled control data using a Kruskal-Wallis non-parametric test to identify any significant differences ($p = 0.05$). Because the growth data passed the assumptions of normality and homogeneity, the data in the treatment groups were compared to the pooled control data using a Bonferroni t-test to identify significant differences ($p = 0.05$).

The 10-day LC_{50} and EC_{50} were estimated to be greater than the highest test concentrations as mortality and growth effects did not exceed 50% for any treatment group. The mean-measured bulk sediment concentrations were used for the analyses.

Survival:

LC_{50} : >63 mg ai/kg	95% C.I.: N/A
NOAEC: 63 mg ai/kg	
LOAEC: >63 mg ai/kg	

Dry Weight:

EC_{50} : >63 mg ai/kg	95% C.I.: N/A
NOAEC: 32 mg ai/kg	
LOAEC: 63 mg ai/kg	

13. VERIFICATION OF STATISTICAL RESULTS:

Statistical Method:

The reviewer analyzed survival and dry weight data using the program CETIS version 1.9.5.3 with database backend settings implemented by EFED on 7/25/17. Four test records were established in CETIS, named the MRID number “50674401” followed by “bulk”, “OC”, “pore”, or “over” to present results in terms of mean-measured bulk sediment, OC-normalized sediment, pore water, and overlying water, respectively.

Negative and solvent control data were compared using an Equal Variance t Two-Sample test ($\alpha = 0.05$) and no significant differences were noted. All further hypothesis testing was conducted comparing treatment data to negative control data only.

Treatment data were tested for normality using Shapiro-Wilk’s test ($\alpha = 0.01$) and for homogeneity of variance using Bartlett’s Equality of Variance Test ($\alpha = 0.01$). Survival data did not meet the assumption of normality and were therefore analyzed using the Mann-Whitney U Two-Sample Test ($\alpha = 0.05$). A more appropriate non-parametric test would be the Wilcoxon Rank Sum test with a Bonferroni adjustment for multiple comparisons. This test was run and conclusions did not change from those inferred by the Mann-Whitney test. Dry weight data met both assumptions and were evaluated using the Dunnett Multiple Comparison test ($\alpha = 0.05$).

Regression analyses were inappropriate for estimating the LC/EC₅₀ values because there was a lack of dose/concentration response in both the survival and dry weight data. Therefore, the LC₅₀ and EC₅₀ values for bulk sediment, pore water, and overlying water were empirically estimated as greater than the highest concentration tested. There was no observed effect on survival. There was a significantly adverse effect in dry weight at the highest test concentration compared to the negative control group. Definitive NOAECs and LOAECs for dry weight are presented in the Table below.

	Bulk Sediment (mg ai/kg)	OC-Normalized Sediment (mg ai/kg-OC)	Pore Water (mg ai/L)	Overlying Water (mg ai/L)
Survival	LC ₅₀ : >63 95% CI: N/A Slope: N/A NOAEC: 63 LOAEC: >63	LC ₅₀ : >24,000 95% CI: N/A Slope: N/A NOAEC: 24,000 LOAEC: >24,000	LC ₅₀ : >10.9 95% CI: N/A Slope: N/A NOAEC: 10.9 LOAEC: >10.9	LC ₅₀ : >0.193 95% CI: N/A Slope: N/A NOAEC: 0.193 LOAEC: >0.193
Dry Weight	EC ₅₀ : >63 95% CI: N/A Slope: N/A NOAEC: 32 LOAEC: 63	EC ₅₀ : >24,000 95% CI: N/A Slope: N/A NOAEC: 12,000 LOAEC: 24,000	EC ₅₀ : >10.9 95% CI: N/A Slope: N/A NOAEC: 5.73 LOAEC: 10.9	EC ₅₀ : >0.193 95% CI: N/A Slope: N/A NOAEC: 0.102 LOAEC: 0.193

14. REVIEWER'S COMMENTS:

The reviewer's results based on bulk sediment were in complete agreement with the study author's for both survival and dry weight. However, the reviewer additionally provided results on the basis of the OC-normalized sediment, pore water, and overlying water. The reviewer's results are reported in the Conclusions section of this DER.

Mean-measured bulk sediment, OC-normalized sediment, pore water, and overlying water concentrations were used for analysis and reporting and are presented in the table below. The reviewer calculated the OC-normalized concentrations using the organic carbon content of the natural sediment (0.26%).

Bulk Sediment (mg ai/kg)	OC-Normalized (mg ai/kg-OC)	Pore Water (mg ai/L)	Overlying Water (mg ai/L)
4.5	1700	0.452	0.0119
8.6	3300	1.02	0.0284
19	7300	2.44	0.0740
32	12000	5.73	0.102
63	24000	10.9	0.193

The in-life phase of the test was conducted from December 1 to 11, 2017.

15. REFERENCES:

Finney, D.J. 1971. Statistical Methods in Biological Assay. Second edition. Griffin Press, London.

West, Inc. and D.D. Gulley. 1996. TOXSTAT® Version 3.5. Western EcoSystems Technology, Inc., Cheyenne, Wyoming.

CETIS Summary Report

Report Date: 27 Jun-19 15:06 (p 1 of 2)
 Test Code/ID: 50674401 bulk / 20-5208-2730

OPPTS 850.1740 Sub-Chronic Sediment (10d SW)

EAG, Inc.

Batch ID: 15-4238-4227	Test Type: Sediment Toxicity 10-d	Analyst:
Start Date: 01 Dec-17	Protocol: OPPTS 850.1740 Sub-chronic Sediment (1	Diluent: Seawater
Ending Date: 11 Dec-17	Species: Leptocheirus plumulosus	Brine:
Test Length: 10d 0h	Taxon: Malacostraca	Source: Aquatic Research Organisms Age:
Sample ID: 11-0113-6882	Code: 50674401 bulk	Project: Fungicide
Sample Date: 01 Dec-17	Material: Metconazole	Source: Kureha Corporation
Receipt Date:	CAS (PC):	Station:
Sample Age: n/a	Client: CDM Smith	

125619 50674401, bulk sediment, mean-measured, ai

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
06-9711-9847	Dry Weight	Equal Variance t Two-Sample Test	0.3215	Solvent Blank passed dry weight	1
06-7655-9213	Survival	Equal Variance t Two-Sample Test	0.8539	Solvent Blank passed survival	1

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓ NOEL	LOEL	TOEL	TU	PMSD	S
13-3028-2335	Dry Weight	Dunnett Multiple Comparison Test	✓ 32	63	44.9		16.1%	1
18-7841-4352	Dry Weight	Williams Multiple Comparison Test	✓ 32	63	44.9		12.6%	1
04-1199-1219	Survival	Jonckheere-Terpstra Step-Down Test	✓ 63	>63	n/a		n/a	1
02-7379-5841	Survival	Mann-Whitney U Two-Sample Test	✓ 63	>63	n/a		6.92%	1

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓ Level	mg ai/kg	95% LCL	95% UCL	TU	S
02-6560-0385	Dry Weight	NLR: 3P Cum Log-Normal (Probit)	IC50	2550	n/a	n/a		1

Dry Weight Summary

Conc-mg ai/kg	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	S	8	0.271	0.244	0.297	0.222	0.315	0.0113	0.032	11.80%	0.00%
0	N	8	0.255	0.231	0.279	0.227	0.299	0.0104	0.0293	11.49%	5.82%
4.5		8	0.289	0.254	0.323	0.246	0.375	0.0147	0.0415	14.37%	-6.56%
8.6		8	0.302	0.271	0.333	0.241	0.349	0.013	0.0367	12.16%	-11.54%
19		8	0.298	0.278	0.318	0.268	0.344	0.00864	0.0244	8.20%	-10.06%
32		8	0.291	0.25	0.332	0.241	0.378	0.0173	0.049	16.84%	-7.43%
63		8	0.2	0.178	0.222	0.162	0.24	0.00925	0.0262	13.06%	25.99%

Survival Summary

Conc-mg ai/kg	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	S	8	0.906	0.854	0.958	0.800	1.000	0.022	0.062	6.88%	0.00%
0	N	8	0.900	0.841	0.959	0.800	1.000	0.025	0.071	7.86%	0.69%
4.5		8	0.938	0.861	1.000	0.800	1.000	0.032	0.092	9.77%	-3.45%
8.6		8	0.969	0.938	1.000	0.900	1.000	0.013	0.037	3.84%	-6.90%
19		8	0.944	0.892	0.996	0.850	1.000	0.022	0.062	6.60%	-4.14%
32		8	0.950	0.887	1.000	0.800	1.000	0.027	0.076	7.96%	-4.83%
63		8	0.931	0.868	0.994	0.800	1.000	0.027	0.075	8.09%	-2.76%

CETIS Summary Report

Report Date: 27 Jun-19 15:06 (p 2 of 2)
Test Code/ID: 50674401 bulk / 20-5208-2730

OPPTS 850.1740 Sub-Chronic Sediment (10d SW)

EAG, Inc.

Dry Weight Detail

Conc-mg ai/kg	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
0	S	0.315	0.262	0.262	0.233	0.222	0.296	0.289	0.287
0	N	0.246	0.299	0.298	0.229	0.239	0.265	0.237	0.227
4.5		0.305	0.375	0.25	0.27	0.294	0.246	0.267	0.301
8.6		0.241	0.349	0.348	0.298	0.314	0.272	0.309	0.285
19		0.276	0.311	0.268	0.303	0.302	0.303	0.277	0.344
32		0.266	0.355	0.26	0.378	0.262	0.241	0.288	0.277
63		0.24	0.21	0.193	0.195	0.162	0.174	0.23	0.199

Survival Detail

Conc-mg ai/kg	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
0	S	0.900	0.900	0.950	0.800	1.000	0.900	0.850	0.950
0	N	0.800	0.950	1.000	0.900	0.950	0.800	0.900	0.900
4.5		1.000	1.000	1.000	0.900	1.000	0.800	0.800	1.000
8.6		0.900	1.000	1.000	1.000	0.950	0.950	0.950	1.000
19		1.000	1.000	0.900	1.000	0.900	0.900	1.000	0.850
32		0.800	1.000	1.000	1.000	1.000	0.900	1.000	0.900
63		1.000	0.950	0.850	1.000	0.950	0.900	1.000	0.800

CETIS Summary Report

Report Date: 27 Jun-19 15:01 (p 1 of 1)
 Test Code/ID: 50674401 OC / 04-6960-4458

OPPTS 850.1740 Sub-Chronic Sediment (10d SW)

EAG, Inc.

Batch ID: 11-3028-0256	Test Type: Sediment Toxicity 10-d	Analyst:
Start Date: 01 Dec-17	Protocol: OPPTS 850.1740 Sub-chronic Sediment (1	Diluent: Seawater
Ending Date: 11 Dec-17	Species: Leptocheirus plumulosus	Brine:
Test Length: 10d 0h	Taxon: Malacostraca	Source: Aquatic Research Organisms Age:
Sample ID: 06-0520-5184	Code: 50674401 OC	Project: Fungicide
Sample Date: 01 Dec-17	Material: Metconazole	Source: Kureha Corporation
Receipt Date: 26 Jun-19 20:29	CAS (PC):	Station:
Sample Age: n/a	Client: CDM Smith	

125619 50674401, OC-normalized sediment, mean-measured, ai

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓ Level	mg/kg OC	95% LCL	95% UCL	TU	S
08-4914-4942	Dry Weight	NLR: 3P Cum Log-Normal (Probit)	IC50	38300000	n/a	n/a		1

Dry Weight Summary

Conc-mg/kg OC	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	S	8	0.271	0.244	0.297	0.222	0.315	0.0113	0.032	11.80%	0.00%
0	N	8	0.255	0.231	0.279	0.227	0.299	0.0104	0.0293	11.49%	5.82%
1700		8	0.289	0.254	0.323	0.246	0.375	0.0147	0.0415	14.37%	-6.56%
3300		8	0.302	0.271	0.333	0.241	0.349	0.013	0.0367	12.16%	-11.54%
7300		8	0.298	0.278	0.318	0.268	0.344	0.00864	0.0244	8.20%	-10.06%
12000		8	0.291	0.25	0.332	0.241	0.378	0.0173	0.049	16.84%	-7.43%
24000		8	0.2	0.178	0.222	0.162	0.24	0.00925	0.0262	13.06%	25.99%

Dry Weight Detail

Conc-mg/kg OC	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
0	S	0.315	0.262	0.262	0.233	0.222	0.296	0.289	0.287
0	N	0.246	0.299	0.298	0.229	0.239	0.265	0.237	0.227
1700		0.305	0.375	0.25	0.27	0.294	0.246	0.267	0.301
3300		0.241	0.349	0.348	0.298	0.314	0.272	0.309	0.285
7300		0.276	0.311	0.268	0.303	0.302	0.303	0.277	0.344
12000		0.266	0.355	0.26	0.378	0.262	0.241	0.288	0.277
24000		0.24	0.21	0.193	0.195	0.162	0.174	0.23	0.199

CETIS Summary Report

Report Date: 27 Jun-19 15:03 (p 1 of 1)
 Test Code/ID: 50674401 over / 06-8622-1021

OPPTS 850.1740 Sub-Chronic Sediment (10d SW)

EAG, Inc.

Batch ID: 00-2823-3059	Test Type: Sediment Toxicity 10-d	Analyst:
Start Date: 01 Dec-17	Protocol: OPPTS 850.1740 Sub-chronic Sediment (1	Diluent: Seawater
Ending Date: 11 Dec-17	Species: Leptocheirus plumulosus	Brine:
Test Length: 10d 0h	Taxon: Malacostraca	Source: Aquatic Research Organisms Age:
Sample ID: 16-1276-9957	Code: 50674401 over	Project: Fungicide
Sample Date: 01 Dec-17	Material: Metconazole	Source: Kureha Corporation
Receipt Date: 26 Jun-19 20:32	CAS (PC):	Station:
Sample Age: n/a	Client: CDM Smith	

125619 50674401, overlying water, mean-measured, ai

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓ Level	mg ai/L	95% LCL	95% UCL	TU	S
03-0148-2115	Dry Weight	NLR: 3P Cum Log-Normal (Probit)	IC50	279000	n/a	n/a		1

Dry Weight Summary

Conc-mg ai/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	S	8	0.271	0.244	0.297	0.222	0.315	0.0113	0.032	11.80%	0.00%
0	N	8	0.255	0.231	0.279	0.227	0.299	0.0104	0.0293	11.49%	5.82%
0.0119		8	0.289	0.254	0.323	0.246	0.375	0.0147	0.0415	14.37%	-6.56%
0.0284		8	0.302	0.271	0.333	0.241	0.349	0.013	0.0367	12.16%	-11.54%
0.074		8	0.298	0.278	0.318	0.268	0.344	0.00864	0.0244	8.20%	-10.06%
0.102		8	0.291	0.25	0.332	0.241	0.378	0.0173	0.049	16.84%	-7.43%
0.193		8	0.2	0.178	0.222	0.162	0.24	0.00925	0.0262	13.06%	25.99%

Dry Weight Detail

Conc-mg ai/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
0	S	0.315	0.262	0.262	0.233	0.222	0.296	0.289	0.287
0	N	0.246	0.299	0.298	0.229	0.239	0.265	0.237	0.227
0.0119		0.305	0.375	0.25	0.27	0.294	0.246	0.267	0.301
0.0284		0.241	0.349	0.348	0.298	0.314	0.272	0.309	0.285
0.074		0.276	0.311	0.268	0.303	0.302	0.303	0.277	0.344
0.102		0.266	0.355	0.26	0.378	0.262	0.241	0.288	0.277
0.193		0.24	0.21	0.193	0.195	0.162	0.174	0.23	0.199

CETIS Summary Report

Report Date: 27 Jun-19 14:57 (p 1 of 1)
Test Code/ID: 50674401 pore / 08-4230-6668

OPPTS 850.1740 Sub-Chronic Sediment (10d SW)

EAG, Inc.

Batch ID: 13-5181-2100	Test Type: Sediment Toxicity 10-d	Analyst:
Start Date: 01 Dec-17	Protocol: OPPTS 850.1740 Sub-chronic Sediment (1	Diluent: Seawater
Ending Date: 11 Dec-17	Species: Leptocheirus plumulosus	Brine:
Test Length: 10d 0h	Taxon: Malacostraca	Source: Aquatic Research Organisms Age:
Sample ID: 11-1824-8565	Code: 50674401 pore	Project: Fungicide
Sample Date: 01 Dec-17	Material: Metconazole	Source: Kureha Corporation
Receipt Date: 26 Jun-19 20:31	CAS (PC):	Station:
Sample Age: n/a	Client: CDM Smith	

125619 50674401, pore water, mean-measured, ai

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓ Level	mg ai/L	95% LCL	95% UCL	TU	S
21-2398-4604	Dry Weight	NLR: 3P Cum Log-Normal (Probit)	IC1	10.5	n/a	10.6		1
			IC5	10.6	n/a	10.7		
			IC10	10.7	10.5	10.8		
			IC15	10.8	10.6	10.9		
			IC20	10.8	10.7	10.9		
			IC25	10.9	10.8	10.9		
			IC40	11	10.9	11		
			IC50	11	11	11.1		

Dry Weight Summary

Conc-mg ai/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	S	8	0.271	0.244	0.297	0.222	0.315	0.0113	0.032	11.80%	0.00%
0	N	8	0.255	0.231	0.279	0.227	0.299	0.0104	0.0293	11.49%	5.82%
0.452		8	0.289	0.254	0.323	0.246	0.375	0.0147	0.0415	14.37%	-6.56%
1.02		8	0.302	0.271	0.333	0.241	0.349	0.013	0.0367	12.16%	-11.54%
2.44		8	0.298	0.278	0.318	0.268	0.344	0.00864	0.0244	8.20%	-10.06%
5.73		8	0.291	0.25	0.332	0.241	0.378	0.0173	0.049	16.84%	-7.43%
10.9		8	0.2	0.178	0.222	0.162	0.24	0.00925	0.0262	13.06%	25.99%

Dry Weight Detail

Conc-mg ai/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8
0	S	0.315	0.262	0.262	0.233	0.222	0.296	0.289	0.287
0	N	0.246	0.299	0.298	0.229	0.239	0.265	0.237	0.227
0.452		0.305	0.375	0.25	0.27	0.294	0.246	0.267	0.301
1.02		0.241	0.349	0.348	0.298	0.314	0.272	0.309	0.285
2.44		0.276	0.311	0.268	0.303	0.302	0.303	0.277	0.344
5.73		0.266	0.355	0.26	0.378	0.262	0.241	0.288	0.277
10.9		0.24	0.21	0.193	0.195	0.162	0.174	0.23	0.199

CETIS Analytical Report

Report Date: 27 Jun-19 15:04 (p 1 of 6)
Test Code/ID: 50674401 bulk / 20-5208-2730

OPPTS 850.1740 Sub-Chronic Sediment (10d SW) EAG, Inc.

Analysis ID: 06-9711-9847	Endpoint: Dry Weight	CETIS Version: CETISv1.9.5
Analyzed: 26 Jun-19 21:42	Analysis: Parametric-Two Sample	Status Level: 1
Batch ID: 15-4238-4227	Test Type: Sediment Toxicity 10-d	Analyst:
Start Date: 01 Dec-17	Protocol: OPPTS 850.1740 Sub-chronic Sediment (1	Diluent: Seawater
Ending Date: 11 Dec-17	Species: Leptocheirus plumulosus	Brine:
Test Length: 10d 0h	Taxon: Malacostraca	Source: Aquatic Research Organism Age:

Data Transform	Alt Hyp	Comparison Result	PMSD
Untransformed	C <> T	Solvent Blank passed dry weight	12.89%

Equal Variance t Two-Sample Test

Control	vs	Control II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		Solvent Blank	1.03	2.14	0.033	14	CDF	0.3215	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0009923	0.0009923	1	1.06	0.3215	Non-Significant Effect
Error	0.0131535	0.0009395	14			
Total	0.0141457		15			

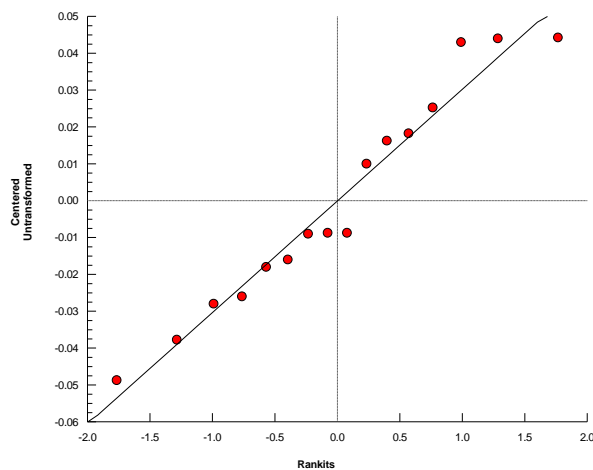
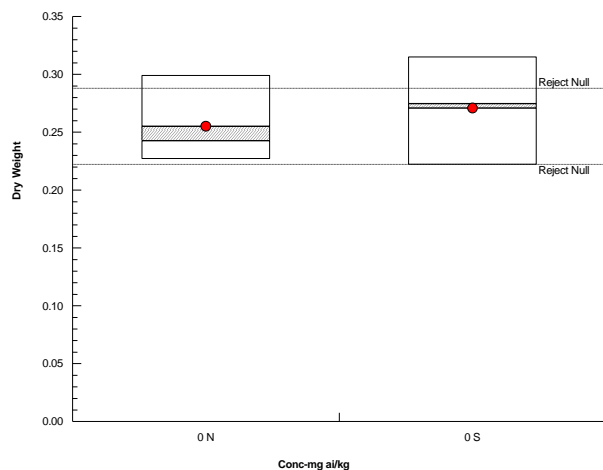
ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Variance Ratio F Test	1.19	8.89	0.8243	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.943	0.841	0.3863	Normal Distribution

Dry Weight Summary

Conc-mg ai/kg	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	S	8	0.271	0.244	0.297	0.275	0.222	0.315	0.0113	11.80%	0.00%
0	N	8	0.255	0.231	0.279	0.243	0.227	0.299	0.0104	11.49%	5.82%

Graphics



CETIS Analytical Report

Report Date: 27 Jun-19 15:04 (p 2 of 6)
Test Code/ID: 50674401 bulk / 20-5208-2730

OPPTS 850.1740 Sub-Chronic Sediment (10d SW)

EAG, Inc.

Analysis ID: 13-3028-2335	Endpoint: Dry Weight	CETIS Version: CETISv1.9.5
Analyzed: 26 Jun-19 21:42	Analysis: Parametric-Control vs Treatments	Status Level: 1
Batch ID: 15-4238-4227	Test Type: Sediment Toxicity 10-d	Analyst:
Start Date: 01 Dec-17	Protocol: OPPTS 850.1740 Sub-chronic Sediment (1	Diluent: Seawater
Ending Date: 11 Dec-17	Species: Leptocheirus plumulosus	Brine:
Test Length: 10d 0h	Taxon: Malacostraca	Source: Aquatic Research Organisms Age:

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	32	63	44.9		16.10%

Dunnett Multiple Comparison Test

Control	vs	Conc-mg ai/k	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		4.5	-1.88	2.31	0.041	14	CDF	0.9991	Non-Significant Effect
		8.6	-2.64	2.31	0.041	14	CDF	1.0000	Non-Significant Effect
		19	-2.42	2.31	0.041	14	CDF	0.9999	Non-Significant Effect
		32	-2.02	2.31	0.041	14	CDF	0.9995	Non-Significant Effect
		63*	3.07	2.31	0.041	14	CDF	0.0081	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0609792	0.0121958	5	9.62	3.6E-06	Significant Effect
Error	0.0532507	0.0012679	42			
Total	0.11423		47			

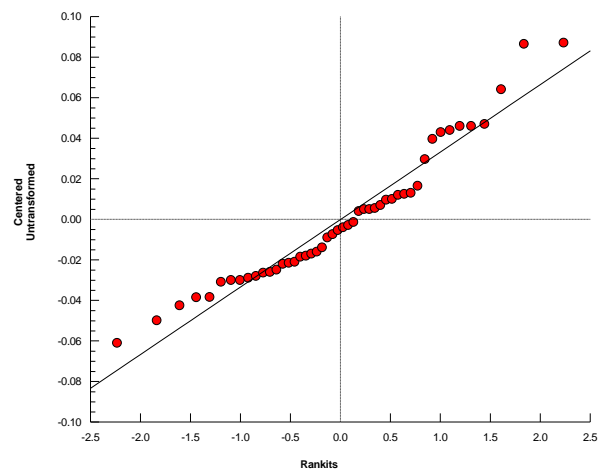
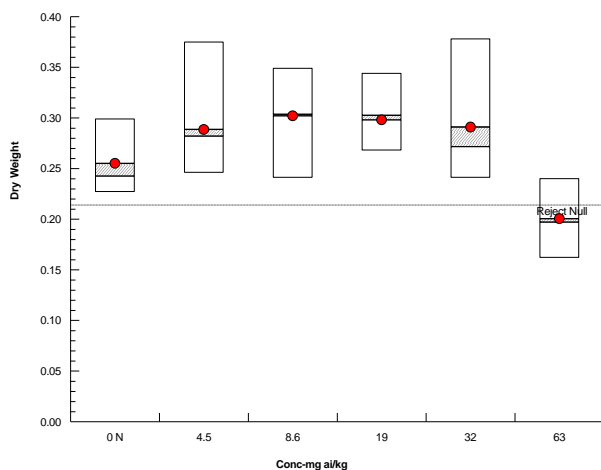
ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	5.01	15.1	0.4144	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.945	0.934	0.0249	Normal Distribution

Dry Weight Summary

Conc-mg ai/kg	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	8	0.255	0.231	0.279	0.243	0.227	0.299	0.0104	11.49%	0.00%
4.5		8	0.289	0.254	0.323	0.282	0.246	0.375	0.0147	14.37%	-13.14%
8.6		8	0.302	0.271	0.333	0.303	0.241	0.349	0.013	12.16%	-18.43%
19		8	0.298	0.278	0.318	0.303	0.268	0.344	0.00864	8.20%	-16.86%
32		8	0.291	0.25	0.332	0.271	0.241	0.378	0.0173	16.84%	-14.07%
63		8	0.2	0.178	0.222	0.197	0.162	0.24	0.00925	13.06%	21.42%

Graphics



CETIS Analytical Report

Report Date: 27 Jun-19 15:04 (p 3 of 6)
Test Code/ID: 50674401 bulk / 20-5208-2730

OPPTS 850.1740 Sub-Chronic Sediment (10d SW)

EAG, Inc.

Analysis ID: 18-7841-4352	Endpoint: Dry Weight	CETIS Version: CETISv1.9.5
Analyzed: 26 Jun-19 21:43	Analysis: Parametric-Control vs Ord.Treatments	Status Level: 1
Batch ID: 15-4238-4227	Test Type: Sediment Toxicity 10-d	Analyst:
Start Date: 01 Dec-17	Protocol: OPPTS 850.1740 Sub-chronic Sediment (1	Diluent: Seawater
Ending Date: 11 Dec-17	Species: Leptocheirus plumulosus	Brine:
Test Length: 10d 0h	Taxon: Malacostraca	Source: Aquatic Research Organisms Age:

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	32	63	44.9		12.58%

Williams Multiple Comparison Test

Control	vs	Conc-mg ai/k	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		4.5	-1.88	1.68	0.03	14	CDF	>0.05	Non-Significant Effect
		8.6	-2.26	1.76	0.031	14	CDF	>0.05	Non-Significant Effect
		19	-2.31	1.78	0.032	14	CDF	>0.05	Non-Significant Effect
		32	-2.02	1.79	0.032	14	CDF	>0.05	Non-Significant Effect
		63*	3.07	1.8	0.032	14	CDF	<0.05	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0609792	0.0121958	5	9.62	3.6E-06	Significant Effect
Error	0.0532507	0.0012679	42			
Total	0.11423		47			

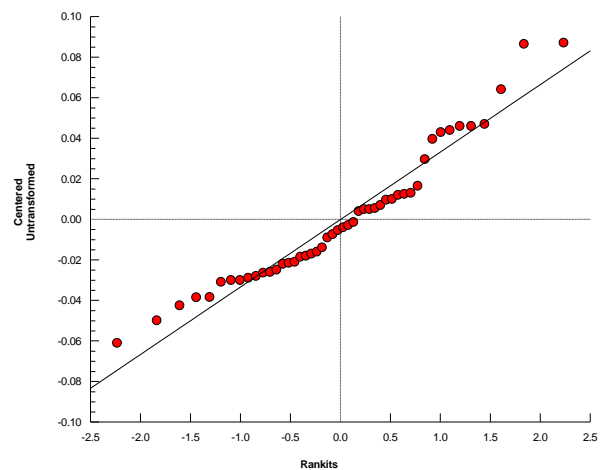
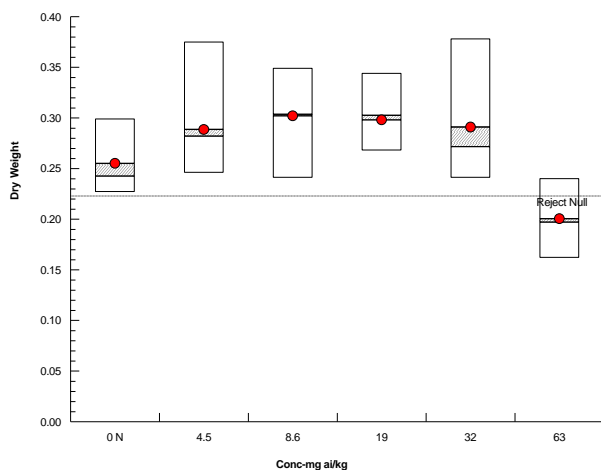
ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	5.01	15.1	0.4144	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.945	0.934	0.0249	Normal Distribution

Dry Weight Summary

Conc-mg ai/kg	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	8	0.255	0.231	0.279	0.243	0.227	0.299	0.0104	11.49%	0.00%
4.5		8	0.289	0.254	0.323	0.282	0.246	0.375	0.0147	14.37%	-13.14%
8.6		8	0.302	0.271	0.333	0.303	0.241	0.349	0.013	12.16%	-18.43%
19		8	0.298	0.278	0.318	0.303	0.268	0.344	0.00864	8.20%	-16.86%
32		8	0.291	0.25	0.332	0.271	0.241	0.378	0.0173	16.84%	-14.07%
63		8	0.2	0.178	0.222	0.197	0.162	0.24	0.00925	13.06%	21.42%

Graphics



CETIS Analytical Report

Report Date: 27 Jun-19 15:04 (p 4 of 6)
Test Code/ID: 50674401 bulk / 20-5208-2730

OPPTS 850.1740 Sub-Chronic Sediment (10d SW) EAG, Inc.

Analysis ID: 06-7655-9213	Endpoint: Survival	CETIS Version: CETISv1.9.5
Analyzed: 26 Jun-19 21:41	Analysis: Parametric-Two Sample	Status Level: 1
Batch ID: 15-4238-4227	Test Type: Sediment Toxicity 10-d	Analyst:
Start Date: 01 Dec-17	Protocol: OPPTS 850.1740 Sub-chronic Sediment (1	Diluent: Seawater
Ending Date: 11 Dec-17	Species: Leptocheirus plumulosus	Brine:
Test Length: 10d 0h	Taxon: Malacostraca	Source: Aquatic Research Organism Age:

Data Transform	Alt Hyp	Comparison Result	PMSD
Untransformed	C <> T	Solvent Blank passed survival	7.94%

Equal Variance t Two-Sample Test

Control	vs	Control II	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		Solvent Blank	0.188	2.14	0.072	14	CDF	0.8539	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0001563	0.0001563	1	0.0352	0.8539	Non-Significant Effect
Error	0.0621875	0.004442	14			
Total	0.0623438		15			

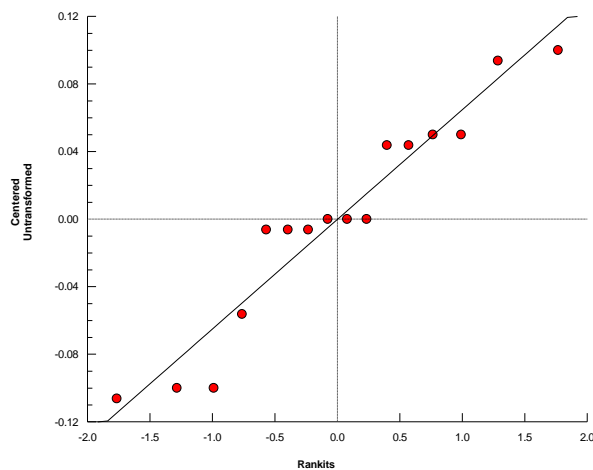
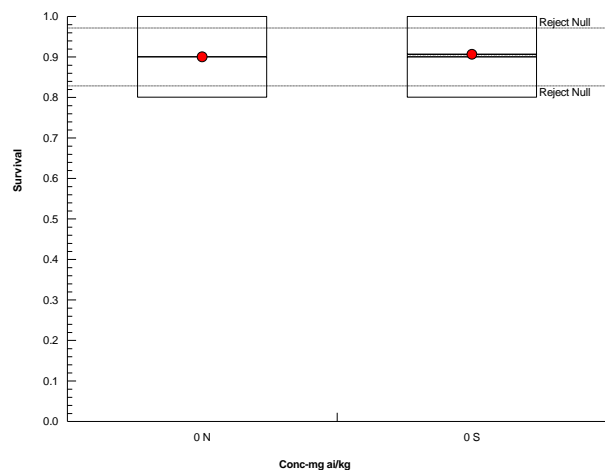
ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Variance Ratio F Test	1.29	8.89	0.7474	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.919	0.841	0.1631	Normal Distribution

Survival Summary

Conc-mg ai/kg	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	S	8	0.906	0.854	0.958	0.900	0.800	1.000	0.022	6.88%	0.00%
0	N	8	0.900	0.841	0.959	0.900	0.800	1.000	0.025	7.86%	0.69%

Graphics



CETIS Analytical Report

Report Date: 27 Jun-19 15:04 (p 5 of 6)
Test Code/ID: 50674401 bulk / 20-5208-2730

OPPTS 850.1740 Sub-Chronic Sediment (10d SW)

EAG, Inc.

Analysis ID: 02-7379-5841	Endpoint: Survival	CETIS Version: CETISv1.9.5
Analyzed: 26 Jun-19 21:42	Analysis: Nonparametric-Two Sample	Status Level: 1
Batch ID: 15-4238-4227	Test Type: Sediment Toxicity 10-d	Analyst:
Start Date: 01 Dec-17	Protocol: OPPTS 850.1740 Sub-chronic Sediment (1	Diluent: Seawater
Ending Date: 11 Dec-17	Species: Leptocheirus plumulosus	Brine:
Test Length: 10d 0h	Taxon: Malacostraca	Source: Aquatic Research Organism Age:

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	63	>63	n/a		6.92%

Mann-Whitney U Two-Sample Test

Control	vs	Conc-mg ai/k	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Negative Control		4.5	21	n/a	3	14	Exact	0.9175	Non-Significant Effect
		8.6	12.5	n/a	3	14	Exact	0.9903	Non-Significant Effect
		19	21.5	n/a	2	14	Exact	0.8897	Non-Significant Effect
		32	18.5	n/a	3	14	Exact	0.9531	Non-Significant Effect
		63	23	n/a	4	14	Exact	0.8423	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0208854	0.0041771	5	0.834	0.5329	Non-Significant Effect
Error	0.210313	0.0050074	42			
Total	0.231198		47			

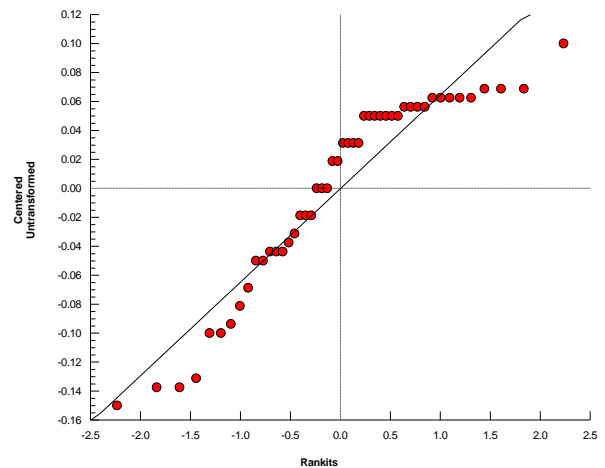
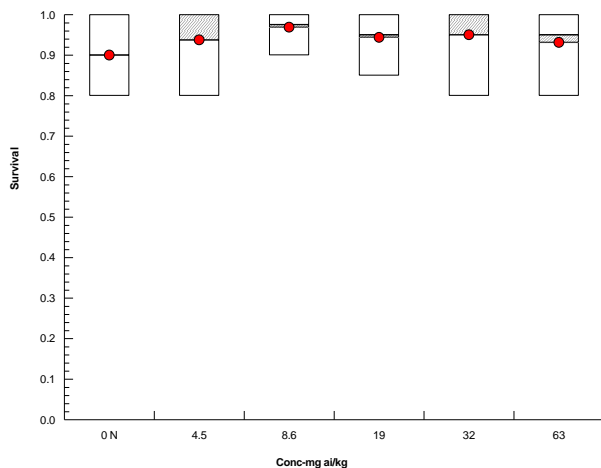
ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	5.1	15.1	0.4039	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.896	0.934	4.6E-04	Non-Normal Distribution

Survival Summary

Conc-mg ai/kg	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	8	0.900	0.841	0.959	0.900	0.800	1.000	0.025	7.86%	0.00%
4.5		8	0.938	0.861	1.000	1.000	0.800	1.000	0.032	9.77%	-4.17%
8.6		8	0.969	0.938	1.000	0.975	0.900	1.000	0.013	3.84%	-7.64%
19		8	0.944	0.892	0.996	0.950	0.850	1.000	0.022	6.60%	-4.86%
32		8	0.950	0.887	1.000	1.000	0.800	1.000	0.027	7.96%	-5.56%
63		8	0.931	0.868	0.994	0.950	0.800	1.000	0.027	8.09%	-3.47%

Graphics



CETIS Analytical Report

Report Date: 27 Jun-19 15:05 (p 6 of 6)
Test Code/ID: 50674401 bulk / 20-5208-2730

OPPTS 850.1740 Sub-Chronic Sediment (10d SW)

EAG, Inc.

Analysis ID: 04-1199-1219	Endpoint: Survival	CETIS Version: CETISv1.9.5
Analyzed: 26 Jun-19 21:43	Analysis: Nonparametric-Control vs Ord. Treatments	Status Level: 1
Batch ID: 15-4238-4227	Test Type: Sediment Toxicity 10-d	Analyst:
Start Date: 01 Dec-17	Protocol: OPPTS 850.1740 Sub-chronic Sediment (1	Diluent: Seawater
Ending Date: 11 Dec-17	Species: Leptocheirus plumulosus	Brine:
Test Length: 10d 0h	Taxon: Malacostraca	Source: Aquatic Research Organism Age:

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU
Untransformed	C > T	63	>63	n/a	

Jonckheere-Terpstra Step-Down Test

Control	vs	Conc-mg ai/k	Test Stat	Critical	Ties	P-Type	P-Value	Decision(α:5%)
Negative Control		4.5	-1.21	1.64	4	Asymp	0.9625	Non-Significant Effect
		8.6	-1.78	1.64	4	Asymp	0.9625	Non-Significant Effect
		19	-1.26	1.64	4	Asymp	0.9101	Non-Significant Effect
		32	-1.34	1.64	4	Asymp	0.9101	Non-Significant Effect
		63	-0.768	1.64	5	Asymp	0.7789	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0208854	0.0041771	5	0.834	0.5329	Non-Significant Effect
Error	0.210313	0.0050074	42			
Total	0.231198		47			

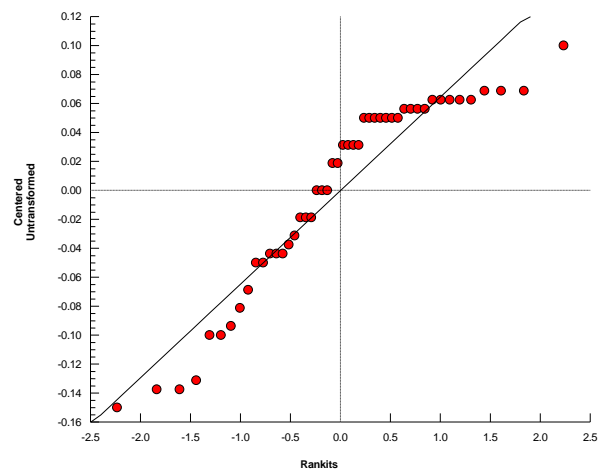
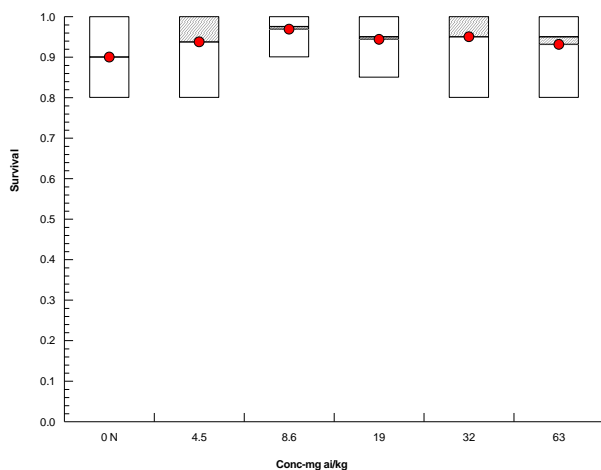
ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	5.1	15.1	0.4039	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.896	0.934	4.6E-04	Non-Normal Distribution

Survival Summary

Conc-mg ai/kg	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	8	0.900	0.841	0.959	0.900	0.800	1.000	0.025	7.86%	0.00%
4.5		8	0.938	0.861	1.000	1.000	0.800	1.000	0.032	9.77%	-4.17%
8.6		8	0.969	0.938	1.000	0.975	0.900	1.000	0.013	3.84%	-7.64%
19		8	0.944	0.892	0.996	0.950	0.850	1.000	0.022	6.60%	-4.86%
32		8	0.950	0.887	1.000	1.000	0.800	1.000	0.027	7.96%	-5.56%
63		8	0.931	0.868	0.994	0.950	0.800	1.000	0.027	8.09%	-3.47%

Graphics



CETIS Analytical Report

Report Date: 27 Jun-19 15:06 (p 1 of 2)
Test Code/ID: 50674401 bulk / 20-5208-2730

OPPTS 850.1740 Sub-Chronic Sediment (10d SW)

EAG, Inc.

Analysis ID: 02-6560-0385	Endpoint: Dry Weight	CETIS Version: CETISv1.9.5
Analyzed: 26 Jun-19 21:43	Analysis: Nonlinear Regression (NLR)	Status Level: 1
Batch ID: 15-4238-4227	Test Type: Sediment Toxicity 10-d	Analyst:
Start Date: 01 Dec-17	Protocol: OPPTS 850.1740 Sub-chronic Sediment (1	Diluent: Seawater
Ending Date: 11 Dec-17	Species: Leptocheirus plumulosus	Brine:
Test Length: 10d 0h	Taxon: Malacostraca	Source: Aquatic Research Organism Age:

Non-Linear Regression Options

Model Name and Function	Weighting Function	PTBS Function	X Trans	Y Trans
3P Cum Log-Normal (Probit): $\mu = \alpha \cdot [1 - \Phi[\log[x/\delta]/\gamma]]$	Normal [$\omega=1$]	Off [$\mu^*=\mu$]	None	None

Regression Summary

Iters	Log LL	AICc	BIC	Adj R2	PMSD	Thresh	Optimize	F Stat	P-Value	Decision($\alpha:5\%$)
7	92.6	-179	-174		39.24%	0.27	Yes	247	0.0000	Significant Lack of Fit

Point Estimates

Level	mg ai/kg	95% LCL	95% UCL
IC50	2550	n/a	n/a

Regression Parameters

Parameter	Estimate	Std Error	95% LCL	95% UCL	t Stat	P-Value	Decision($\alpha:5\%$)
α	0.27	0.0525	0.164	0.375	5.13	5.9E-06	Significant Parameter
γ	-1.2E+07	3.39E+13	-6.8E+13	6.83E+13	-3.6E-07	1.0000	Non-Significant Parameter
δ	2550	3.73E+10	-7.5E+10	7.52E+10	6.84E-08	1.0000	Non-Significant Parameter

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision($\alpha:5\%$)
Lack of Fit	0.94	0.313	3	247	<1.0E-37	Significant
Model	2.68	0.895	3	40.6	<1.0E-37	Significant
Pure Error	0.0533	0.00127	42			
Residual	0.993	0.0221	45			

Residual Analysis

Attribute	Method	Test Stat	Critical	P-Value	Decision($\alpha:5\%$)
Variance	Mod Levene Equality of Variance	0.542	2.44	0.7431	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	0.959	2.49	0.0156	Non-Normal Distribution
	Shapiro-Wilk W Normality Test	0.947	0.952	0.0295	Non-Normal Distribution

Dry Weight Summary

Dry Weight Summary			Calculated Variate						
Conc-mg ai/kg	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	8	0.255	0.227	0.299	0.0104	0.0293	11.50%	0.0%
4.5		8	0.289	0.246	0.375	0.0147	0.0415	14.40%	-13.1%
8.6		8	0.302	0.241	0.349	0.013	0.0367	12.20%	-18.4%
19		8	0.298	0.268	0.344	0.00864	0.0244	8.20%	-16.9%
32		8	0.291	0.241	0.378	0.0173	0.049	16.80%	-14.1%
63		8	0.2	0.162	0.24	0.00925	0.0262	13.10%	21.4%

CETIS Analytical Report

Report Date: 27 Jun-19 15:06 (p 2 of 2)
Test Code/ID: 50674401 bulk / 20-5208-2730

OPPTS 850.1740 Sub-Chronic Sediment (10d SW)

EAG, Inc.

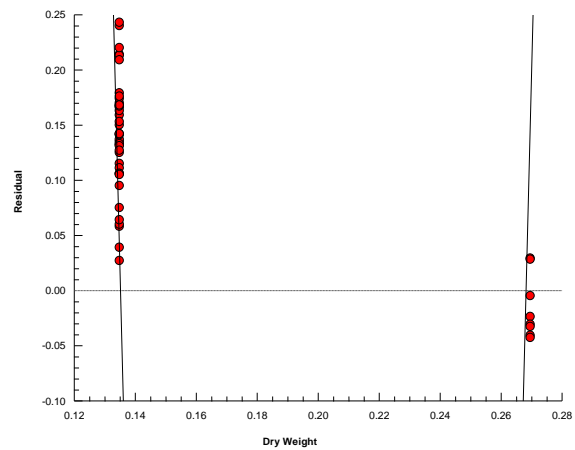
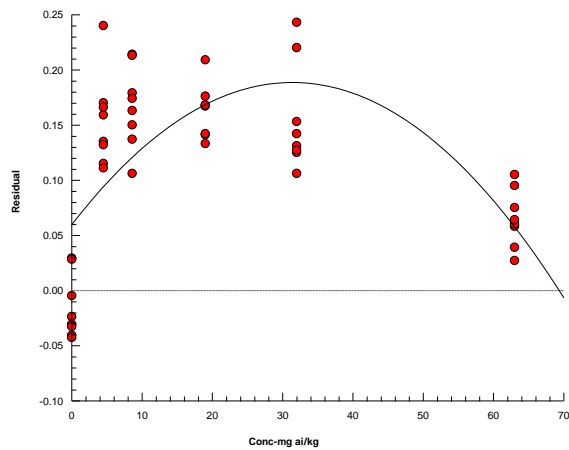
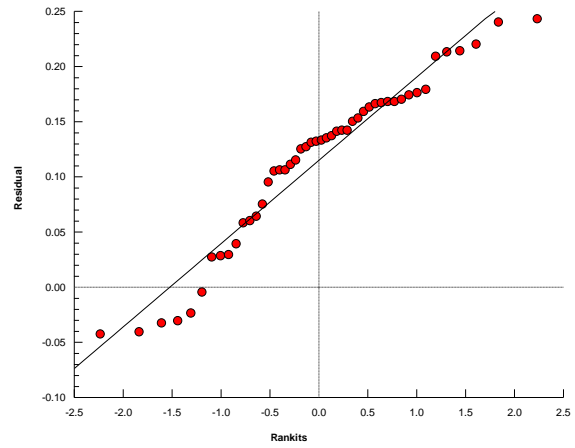
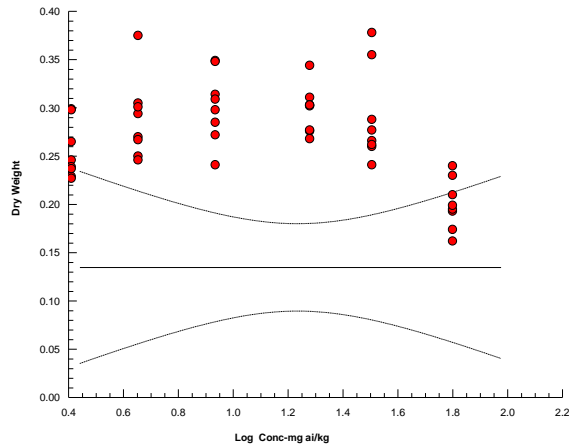
Analysis ID: 02-6560-0385
Analyzed: 26 Jun-19 21:43

Endpoint: Dry Weight
Analysis: Nonlinear Regression (NLR)

CETIS Version: CETISv1.9.5
Status Level: 1

Graphics

Model: 3P Cum Log-Normal (Probit): $\mu = \alpha \cdot [1 - \Phi[\log(x/\delta)/\gamma]]$ Distribution: Normal [$\omega=1$]



CETIS Analytical Report

Report Date: 27 Jun-19 15:00 (p 1 of 2)
 Test Code/ID: 50674401 OC / 04-6960-4458

OPPTS 850.1740 Sub-Chronic Sediment (10d SW)				EAG, Inc.	
Analysis ID:	08-4914-4942	Endpoint:	Dry Weight	CETIS Version:	CETISv1.9.5
Analyzed:	26 Jun-19 21:45	Analysis:	Nonlinear Regression (NLR)	Status Level:	1
Batch ID:	11-3028-0256	Test Type:	Sediment Toxicity 10-d	Analyst:	
Start Date:	01 Dec-17	Protocol:	OPPTS 850.1740 Sub-chronic Sediment (1	Diluent:	Seawater
Ending Date:	11 Dec-17	Species:	Leptocheirus plumulosus	Brine:	
Test Length:	10d 0h	Taxon:	Malacostraca	Source:	Aquatic Research Organism Age:

Non-Linear Regression Options

Model Name and Function	Weighting Function	PTBS Function	X Trans	Y Trans
3P Cum Log-Normal (Probit): $\mu = \alpha \cdot [1 - \Phi[\log[x/\delta]/\gamma]]$	Normal [$\omega=1$]	Off [$\mu^*=\mu$]	None	None

Regression Summary

Iters	Log LL	AICc	BIC	Adj R2	PMSD	Thresh	Optimize	F Stat	P-Value	Decision($\alpha:5\%$)
10	92.6	-179	-174		41.48%	0.255	Yes	247	0.0000	Significant Lack of Fit

Point Estimates

Level	mg/kg OC	95% LCL	95% UCL
IC50	38300000	n/a	n/a

Regression Parameters

Parameter	Estimate	Std Error	95% LCL	95% UCL	t Stat	P-Value	Decision($\alpha:5\%$)
α	0.255	0.0525	0.149	0.361	4.86	1.5E-05	Significant Parameter
γ	-703000	1.22E+11	-2.5E+11	2.47E+11	-5.8E-06	1.0000	Non-Significant Parameter
δ	3.83E+08	7.37E+14	-1.5E+15	1.48E+15	5.19E-07	1.0000	Non-Significant Parameter

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision($\alpha:5\%$)
Lack of Fit	0.94	0.313	3	247	<1.0E-37	Significant
Model	2.68	0.895	3	40.6	<1.0E-37	Significant
Pure Error	0.0533	0.00127	42			
Residual	0.993	0.0221	45			

Residual Analysis

Attribute	Method	Test Stat	Critical	P-Value	Decision($\alpha:5\%$)
Variance	Mod Levene Equality of Variance	0.542	2.44	0.7431	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	0.959	2.49	0.0156	Non-Normal Distribution
	Shapiro-Wilk W Normality Test	0.947	0.952	0.0295	Non-Normal Distribution

Dry Weight Summary

Dry Weight Summary			Calculated Variate						
Conc-mg/kg OC	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	8	0.255	0.227	0.299	0.0104	0.0293	11.50%	0.0%
1700		8	0.289	0.246	0.375	0.0147	0.0415	14.40%	-13.1%
3300		8	0.302	0.241	0.349	0.013	0.0367	12.20%	-18.4%
7300		8	0.298	0.268	0.344	0.00864	0.0244	8.20%	-16.9%
12000		8	0.291	0.241	0.378	0.0173	0.049	16.80%	-14.1%
24000		8	0.2	0.162	0.24	0.00925	0.0262	13.10%	21.4%

CETIS Analytical Report

Report Date: 27 Jun-19 15:00 (p 2 of 2)
Test Code/ID: 50674401 OC / 04-6960-4458

OPPTS 850.1740 Sub-Chronic Sediment (10d SW)

EAG, Inc.

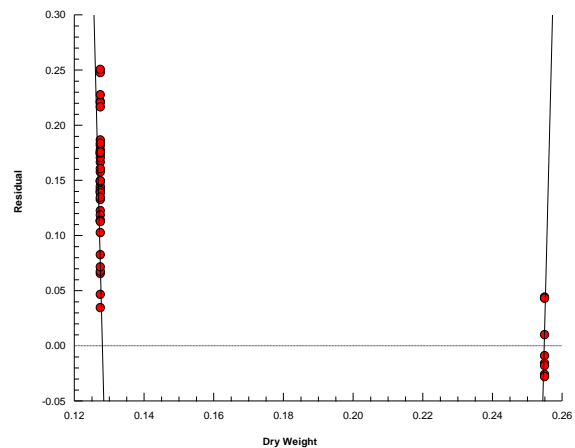
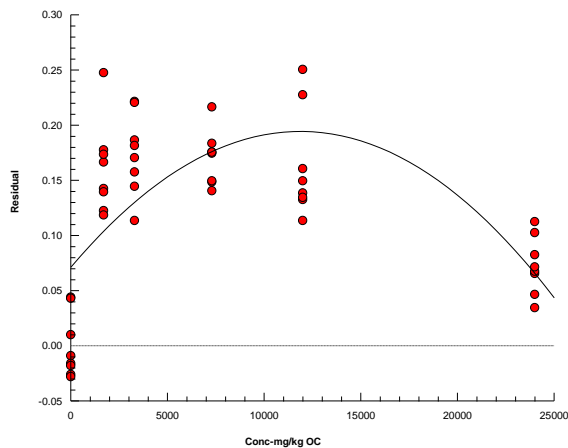
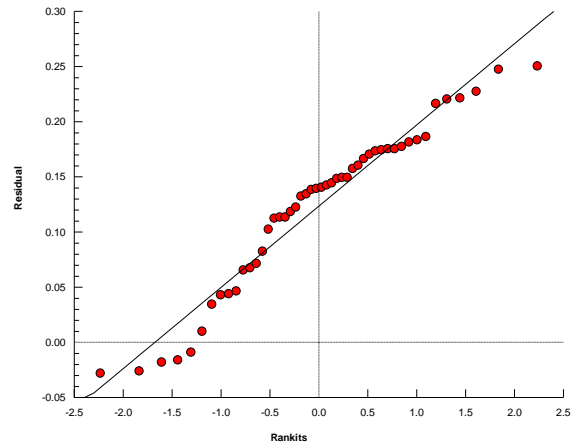
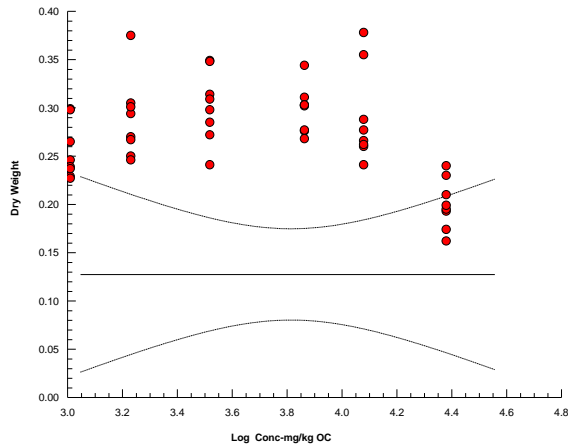
Analysis ID: 08-4914-4942
Analyzed: 26 Jun-19 21:45

Endpoint: Dry Weight
Analysis: Nonlinear Regression (NLR)

CETIS Version: CETISv1.9.5
Status Level: 1

Graphics

Model: 3P Cum Log-Normal (Probit): $\mu = \alpha \cdot [1 - \Phi[\log(x/\delta)/\gamma]]$ Distribution: Normal [$\omega=1$]



CETIS Analytical Report

Report Date: 27 Jun-19 15:02 (p 1 of 2)
Test Code/ID: 50674401 over / 06-8622-1021

OPPTS 850.1740 Sub-Chronic Sediment (10d SW)

EAG, Inc.

Analysis ID: 03-0148-2115	Endpoint: Dry Weight	CETIS Version: CETISv1.9.5
Analyzed: 26 Jun-19 21:44	Analysis: Nonlinear Regression (NLR)	Status Level: 1
Batch ID: 00-2823-3059	Test Type: Sediment Toxicity 10-d	Analyst:
Start Date: 01 Dec-17	Protocol: OPPTS 850.1740 Sub-chronic Sediment (1	Diluent: Seawater
Ending Date: 11 Dec-17	Species: Leptocheirus plumulosus	Brine:
Test Length: 10d 0h	Taxon: Malacostraca	Source: Aquatic Research Organism Age:

Non-Linear Regression Options

Model Name and Function	Weighting Function	PTBS Function	X Trans	Y Trans
3P Cum Log-Normal (Probit): $\mu=\alpha \cdot [1 - \Phi[\log[x/\delta]/\gamma]]$	Normal [$\omega=1$]	Off [$\mu^*=\mu$]	None	None

Regression Summary

Iters	Log LL	AICc	BIC	Adj R2	PMSD	Thresh	Optimize	F Stat	P-Value	Decision($\alpha:5\%$)
10	92.6	-179	-174		41.48%	0.255	Yes	247	0.0000	Significant Lack of Fit

Point Estimates

Level	mg ai/L	95% LCL	95% UCL
IC50	279000	n/a	n/a

Regression Parameters

Parameter	Estimate	Std Error	95% LCL	95% UCL	t Stat	P-Value	Decision($\alpha:5\%$)
α	0.255	0.0525	0.149	0.361	4.86	1.5E-05	Significant Parameter
γ	-5.6E+08	7.48E+16	-1.5E+17	1.51E+17	-7.5E-09	1.0000	Non-Significant Parameter
δ	279000	5.74E+14	-1.2E+15	1.16E+15	4.86E-10	1.0000	Non-Significant Parameter

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision($\alpha:5\%$)
Lack of Fit	0.94	0.313	3	247	<1.0E-37	Significant
Model	2.68	0.895	3	40.6	<1.0E-37	Significant
Pure Error	0.0533	0.00127	42			
Residual	0.993	0.0221	45			

Residual Analysis

Attribute	Method	Test Stat	Critical	P-Value	Decision($\alpha:5\%$)
Variance	Mod Levene Equality of Variance	0.542	2.44	0.7431	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	0.959	2.49	0.0156	Non-Normal Distribution
	Shapiro-Wilk W Normality Test	0.947	0.952	0.0295	Non-Normal Distribution

Dry Weight Summary

Conc-mg ai/L	Code	Count	Calculated Variate						
			Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	8	0.255	0.227	0.299	0.0104	0.0293	11.50%	0.0%
0.0119		8	0.289	0.246	0.375	0.0147	0.0415	14.40%	-13.1%
0.0284		8	0.302	0.241	0.349	0.013	0.0367	12.20%	-18.4%
0.074		8	0.298	0.268	0.344	0.00864	0.0244	8.20%	-16.9%
0.102		8	0.291	0.241	0.378	0.0173	0.049	16.80%	-14.1%
0.193		8	0.2	0.162	0.24	0.00925	0.0262	13.10%	21.4%

CETIS Analytical Report

Report Date: 27 Jun-19 15:02 (p 2 of 2)
Test Code/ID: 50674401 over / 06-8622-1021

OPPTS 850.1740 Sub-Chronic Sediment (10d SW)

EAG, Inc.

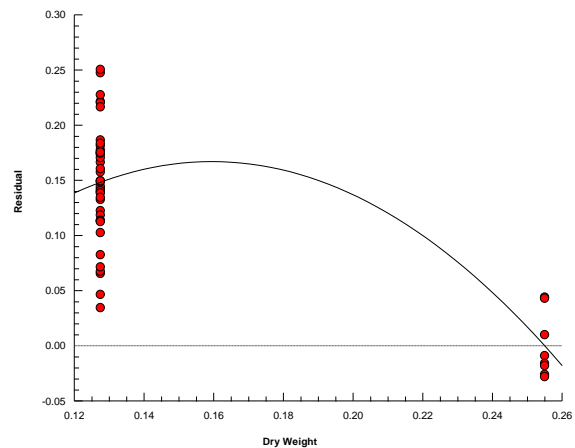
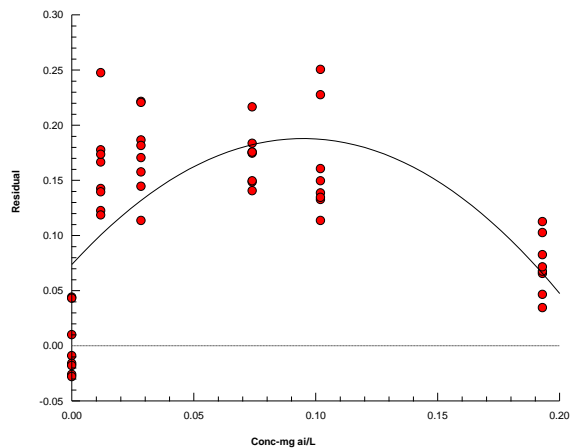
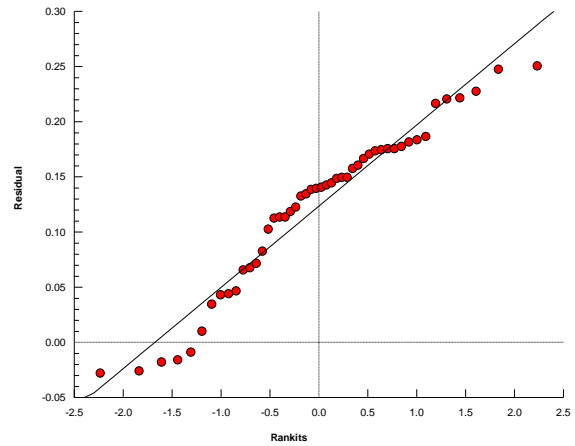
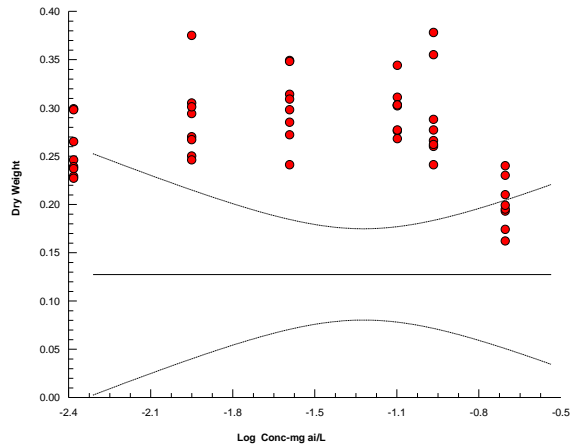
Analysis ID: 03-0148-2115
Analyzed: 26 Jun-19 21:44

Endpoint: Dry Weight
Analysis: Nonlinear Regression (NLR)

CETIS Version: CETISv1.9.5
Status Level: 1

Graphics

Model: 3P Cum Log-Normal (Probit): $\mu = \alpha \cdot [1 - \Phi[\log(x/\delta)/\gamma]]$ Distribution: Normal [$\omega=1$]



CETIS Analytical Report

Report Date: 27 Jun-19 14:56 (p 1 of 2)
Test Code/ID: 50674401 pore / 08-4230-6668

OPPTS 850.1740 Sub-Chronic Sediment (10d SW)

EAG, Inc.

Analysis ID: 21-2398-4604	Endpoint: Dry Weight	CETIS Version: CETISv1.9.5
Analyzed: 27 Jun-19 14:43	Analysis: Nonlinear Regression (NLR)	Status Level: 1
Batch ID: 13-5181-2100	Test Type: Sediment Toxicity 10-d	Analyst:
Start Date: 01 Dec-17	Protocol: OPPTS 850.1740 Sub-chronic Sediment (1	Diluent: Seawater
Ending Date: 11 Dec-17	Species: Leptocheirus plumulosus	Brine:
Test Length: 10d 0h	Taxon: Malacostraca	Source: Aquatic Research Organism Age:

Non-Linear Regression Options

Model Name and Function	Weighting Function	PTBS Function	X Trans	Y Trans
3P Cum Log-Normal (Probit): $\mu = \alpha \cdot [1 - \Phi[\log[x/\delta]/\gamma]]$	Normal [$\omega=1$]	Off [$\mu^*=\mu$]	None	None

Regression Summary

Iters	Log LL	AICc	BIC	Adj R2	PMSD	Thresh	Optimize	F Stat	P-Value	Decision($\alpha:5\%$)
1	158	-310	-305	0.4116	4.20%	0.287	Yes	2.92	0.0451	Significant Lack of Fit

Point Estimates

Level	mg ai/L	95% LCL	95% UCL
IC1	10.5	n/a	10.6
IC5	10.6	n/a	10.7
IC10	10.7	10.5	10.8
IC15	10.8	10.6	10.9
IC20	10.8	10.7	10.9
IC25	10.9	10.8	10.9
IC40	11	10.9	11
IC50	11	11	11.1

Regression Parameters

Parameter	Estimate	Std Error	95% LCL	95% UCL	t Stat	P-Value	Decision($\alpha:5\%$)
α	0.287	0.00598	0.275	0.299	48	<1.0E-37	Significant Parameter
γ	0.0233	0.00314	0.017	0.0296	7.42	<1.0E-37	Significant Parameter
δ	11	0.018	11	11.1	613	<1.0E-37	Significant Parameter

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision($\alpha:5\%$)
Model	3.61	1.2	3	842	<1.0E-37	Significant
Lack of Fit	0.0111	0.0037	3	2.92	0.0451	Significant
Pure Error	0.0533	0.00127	42			
Residual	0.0643	0.00143	45			

Residual Analysis

Attribute	Method	Test Stat	Critical	P-Value	Decision($\alpha:5\%$)
Variance	Bartlett Equality of Variance Test	5.01	11.1	0.4144	Equal Variances
	Mod Levene Equality of Variance	0.542	2.44	0.7431	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	0.546	2.49	0.1644	Normal Distribution
	Shapiro-Wilk W Normality Test	0.959	0.952	0.0909	Normal Distribution

Dry Weight Summary

Conc-mg ai/L	Code	Count	Calculated Variate						
			Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	8	0.255	0.227	0.299	0.0104	0.0293	11.50%	0.0%
0.452		8	0.289	0.246	0.375	0.0147	0.0415	14.40%	-13.1%
1.02		8	0.302	0.241	0.349	0.013	0.0367	12.20%	-18.4%
2.44		8	0.298	0.268	0.344	0.00864	0.0244	8.20%	-16.9%
5.73		8	0.291	0.241	0.378	0.0173	0.049	16.80%	-14.1%
10.9		8	0.2	0.162	0.24	0.00925	0.0262	13.10%	21.4%

CETIS Analytical Report

Report Date: 27 Jun-19 14:56 (p 2 of 2)
Test Code/ID: 50674401 pore / 08-4230-6668

OPPTS 850.1740 Sub-Chronic Sediment (10d SW)

EAG, Inc.

Analysis ID: 21-2398-4604
Analyzed: 27 Jun-19 14:43

Endpoint: Dry Weight
Analysis: Nonlinear Regression (NLR)

CETIS Version: CETISv1.9.5
Status Level: 1

Graphics

Model: 3P Cum Log-Normal (Probit): $\mu = \alpha \cdot [1 - \Phi[\log(x/\delta)/\gamma]]$ Distribution: Normal [$\omega=1$]

